



MOREHOUSE
SCHOOL OF MEDICINE



TRANSLATIONAL TECHNOLOGIES
MOREHOUSE SCHOOL OF MEDICINE

Overview

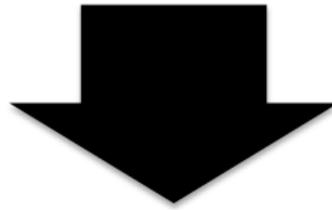
- Mission and Vision
- Background
- Comparative Advantage and Value
- Past Performance
- Contract research efforts
- Morehouse SoM Team – Combined Capabilities

Mission

We exist to: i) improve the health and well-being of individuals and communities; ii) increase the diversity of the health professional and scientific workforce; and iii) address primary health care through programs in education, research, and service

Vision

Leading the creation and advancement of health equity.



Vision Imperatives

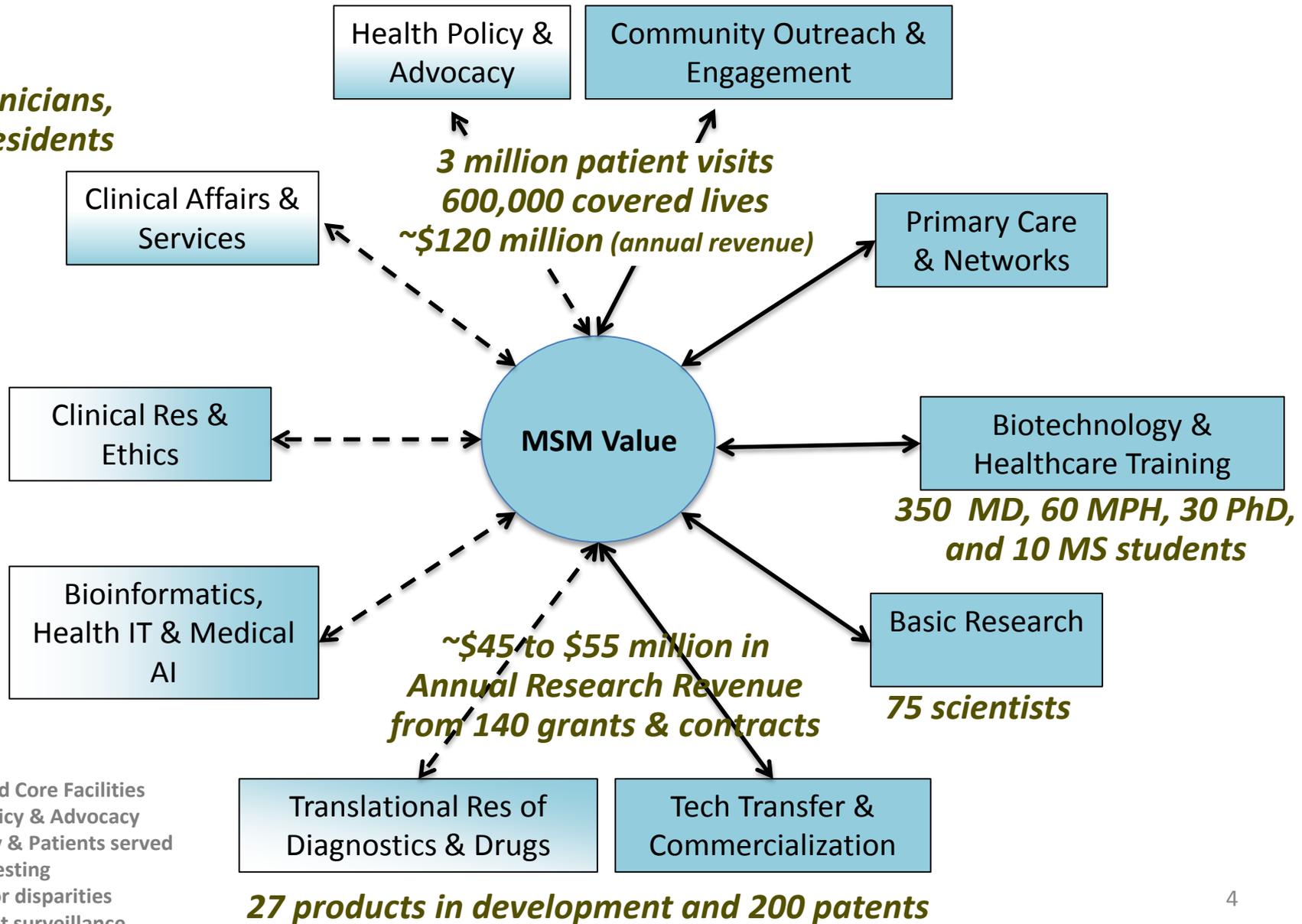
**Translating Discovery into
Health Equity**

**Building Bridges Between
Healthcare and Health**

**Preparing Future Health
Learners and Leaders**

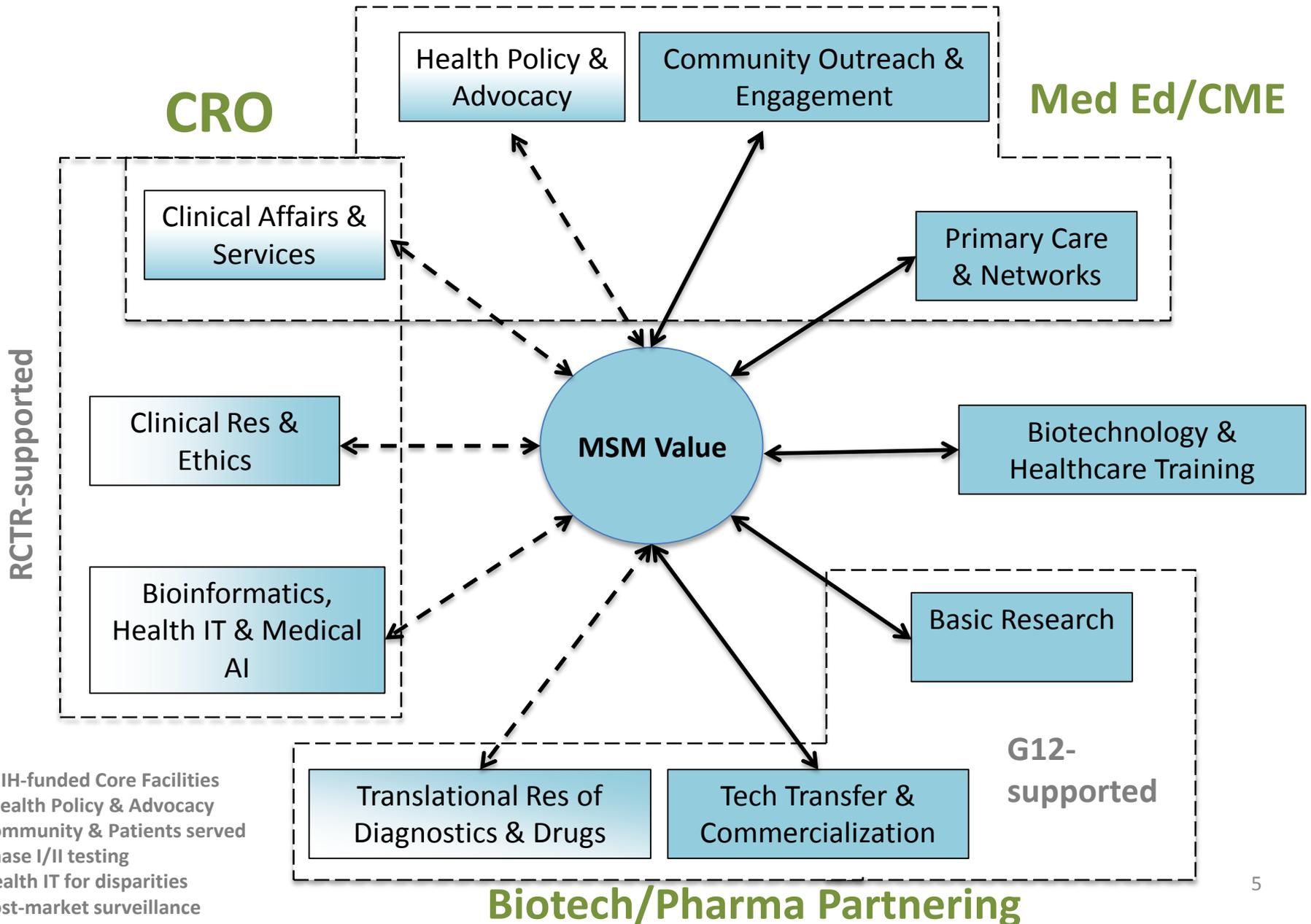
Morehouse SoM Programs at a Glance

**80 clinicians,
140 residents**



- 1) NIH-funded Core Facilities
- 2) Health Policy & Advocacy
- 3) Community & Patients served
- 4) Phase I/II testing
- 5) Health IT for disparities
- 6) Post-market surveillance

Leveraging Capabilities, Technologies, and Services



Contract Research & Service Capabilities

Information Technology (Health IT) Services

ANALYSIS, TESTING, AND
EVALUATION

HEALTH SCIENCES
TECHNICAL SUPPORT

*DATA ANALYTICS

*SOFTWARE & SERVICES
FOR BIOMEDICAL
RESEARCH AND
HEALTHCARE

GENERAL IT & TELECOM

Medical, Life Sciences, & Environmental Services

ANALYTICAL CHEMISTRY
& TOXICOLOGY

PROTEOMICS &
BIOENGINEERING

*GENE PROFILING &
GENOMICS

*BIOINFORMATICS

Healthcare & Social Services

*HEALTH, MEDICAL,
SOCIAL SCIENCE, AND
DEMOGRAPHIC R&D

LEARNING DISABILITIES
AND SOCIOLOGY R&D

*HEALTH POLICY
DEVELOPMENT &
ADVOCACY

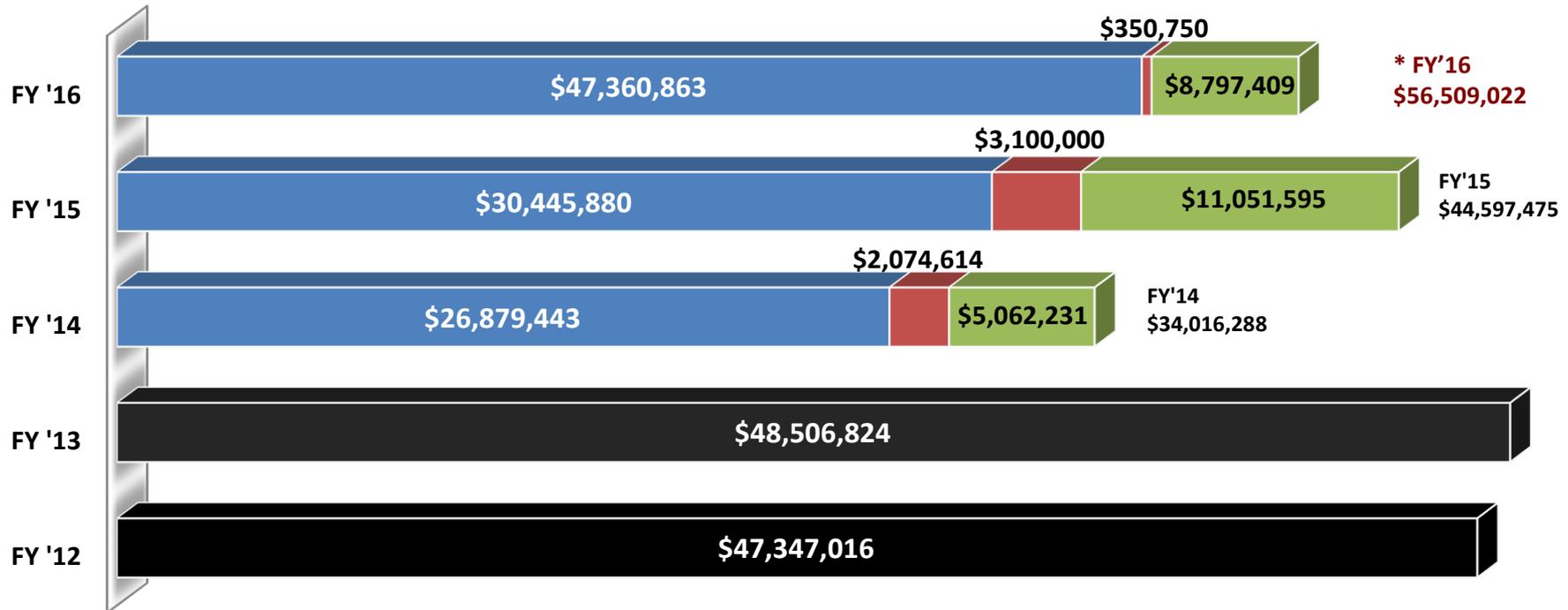
*PUBLIC HEALTH
INFORMATICS



Past Performance – Research & Training Funding

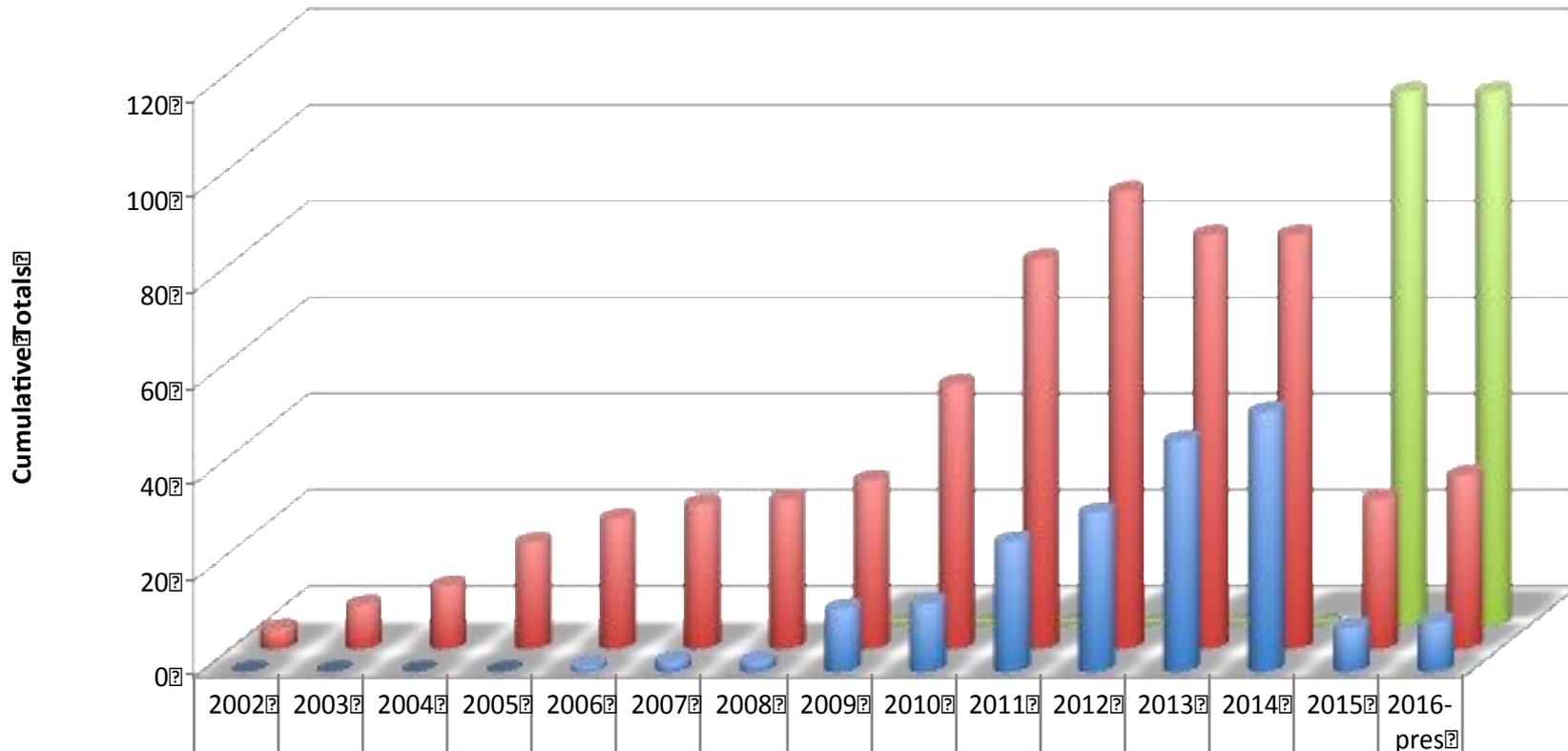
Figure from April 2016

Continuations Renewals New Closed



- FY16: \$56,509,022 with a breakdown of \$47,360,863 from continuing grants, \$8,797,409 as new awards and competitive renewals representing \$350,750.
- FY15: \$44,597,475 with a breakdown of \$30,445,880 from continuation grants, \$11,051,595 as new awards and competitive renewals represent \$3,100,000 of the total.

Past Performance – Intellectual Property Created



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016-present
Remaining Issued Patents	0	0	0	0	1	2	2	13	14	27	33	48	54	9	10
Remaining Pending Patent	4	9	13	22	27	30	31	35	55	81	95	86	86	31	36
Licensed/Assigned Patent Applications								0	0	0	0	0	0	111	111
Total Issued & Pending Patents								48	69	108	128	134	150	151	157

Past Performance – Contracts with Large/Medium Businesses

- *Health IT & Analytics Subcontract Services*
 - **Awarded** DoT-IRS TIPSS4 exclusive HBCU/MI partner with Northrop Grumman (deal valued at \$2m/yr for 10 yrs)
 - **Awarded** Navy Omnibus 3 exclusive HBCU/MI partner with General Dynamics (deal valued at \$1m/yr for 5 yrs)
 - **Awarded** HHS CIO-SP3 LB exclusive HBCU/MI partner with SRA Intl
 - **Awarded** HHS CIO-SP3 SB exclusive HBCU/MI partner with PSI Intl
 - **Not Awarded** DHS Eagle III exclusive HBCU/MI partner with PSI Intl
 - **Not Awarded** CDC and NCI nutritional survey with Reveal Analytics
- *Life Sciences Subcontract Services*
 - **Awarded** nine SBIR/STTR subcontract awards
- *Clinical & Social Subcontract Services*
 - **Awarded** NIH OD OT2OD025284-01 “All of Us”
 - **Awarded** NIH Fogarty D43TW009340 “UJMT Global Consortium”

Past Performance – contracts with Small Businesses

Commercialization & Industry Engagement

- 12 Morehouse SoM technologies have been licensed to small to mid-size businesses that have raised over \$80 million in private equity.
- Four of these companies were awarded \$2.2 million in SBIR/STTR grant awards. Morehouse SoM-associated companies lead the state of Georgia in STTR funding in 2013 and 2014.
- \$850,000 SBIR/STTR subcontracts awarded to Morehouse SoM

Detailed Summary of Commercialization Efforts

Nine Faculty startups and Three Partnerships (focus & track record)

4DGENOME, INC.



Technologies, Inc.



NutriGlobal S, Inc.

R & Z INC.

- 4DGenome 13' (Song): chromosome-specific haplotyping software and single cell isolation equipment (**\$225,000 SBIR award**)
- AccuHealth Technologies 12' (Ofili): app for chronic disease care & clinical trials
- Akumba Diagnostics 13' (Stiles): saliva-based tests for parasitic infections
- BrainGEN 13' (Ford): neuregulin/chimeras to treat CNS injuries and stroke IVD
- **Complexa 11' (Chen)**: synthetic nitro fatty acid (CXA-10) to treat acute renal injury (completed Phase I trial after raising **\$21 million** in funding). Enrolling subjects for Phase II clinical study.
- **Heat Biologics 08' (Pattillo)**: clinical-stage company developing cell-based immunotherapy for the treatment of a wide range of cancers. Raised **\$48 million** through IPO.
- Haplomics 11' (Lillard): rFVIII and therapies for African American hemophilia A patients (**\$575,000 from two STTR and one SBIR awards**).
- JYANT Technologies 10' (Lillard, R Gonzalez, R Singh, S Singh): chemokine/chemokine receptor/obesity receptor antagonists and nanotechnologies for cancer, inflammatory diseases, and their diagnosis (**\$1.2 million from one SBIR and three STTR awards**).
- Orunmil Pharma 15' (Bond): mortalin/HSP65 peptide inhibitor to treat cancers, inflammatory disease, and viral infections.
- Nutriglobal 12' (Hibbert): medicinal foods for sickle cell anemia and cachexia.
- R & Z, Inc. 14' (Xiong/Simon) & **Shenzhen Anshide Asset Co Ltd 16'**: peptide and small molecule ASIC1a inhibitors for CNS injuries associated with acidosis.

SBIR/STTR Awards to Date

AWARD	PROJECT NAME	PI/FACULTY NAME(S)	TOTAL AWARD AMOUNT	PROJECTED AWARD TO MSM
4DGenome R43HG007621-01	Cost-effective and high-throughput chromosomal haplotyping	Song	\$218,556	\$65,567
Exscien Corporation R41NS086267-01A1	Enhancing mtDNA Repair During Stroke Reperfusion to Reduce Brain Damage	Wilson / Simon	\$149,171	\$59,668
Haplomics R41MD008156-01A1	Evaluation of the Antigenicity of Restricted FVIII Haplotypes	Lillard	\$184,545	\$73,818
Haplomics R41MD008809-01	Novel Pharmacogenomic Approach for Identifying T Cell Epitopes in Replacement FVIII Therapy	Lillard	\$203,848	\$81,539
Haplomics R43MD008660-01	H3 FVIII for Hemophilia A Patients at High Risk for Anti-Drug Antibodies	Lillard	\$243,349	\$97,340
JYANT Technologies R43DK096857-01A1	Treatment of Colitis and Ileitis using a Novel CXCR3 Biologic Antagonist	Lillard / R Singh	\$317,247	\$126,898
JYANT Technologies R41CA183399-01A1	Novel adjuvant therapy for triple negative breast cancer	Gonzalez / Lillard	\$225,000	\$90,000
JYANT Technologies R41MD010320-01	Anti-CXCL13 mAb to mitigate prostate cancer health disparities	S Singh / Lillard	\$315,320	\$126,128
JYANT Technologies R41CA214080-01	Anti-CCL25 mAb to treat castration resistant prostate cancer	S Singh / Lillard	\$315,320	\$126,128
TOTAL			\$2,172,356	\$847,086



Contract Research & Service Capabilities

Strategically Partnering to Add Depth and Breadth

Information Technology
(Health IT) Services



Medical, Life Sciences,
& Environmental
Services



Healthcare & Social
Services



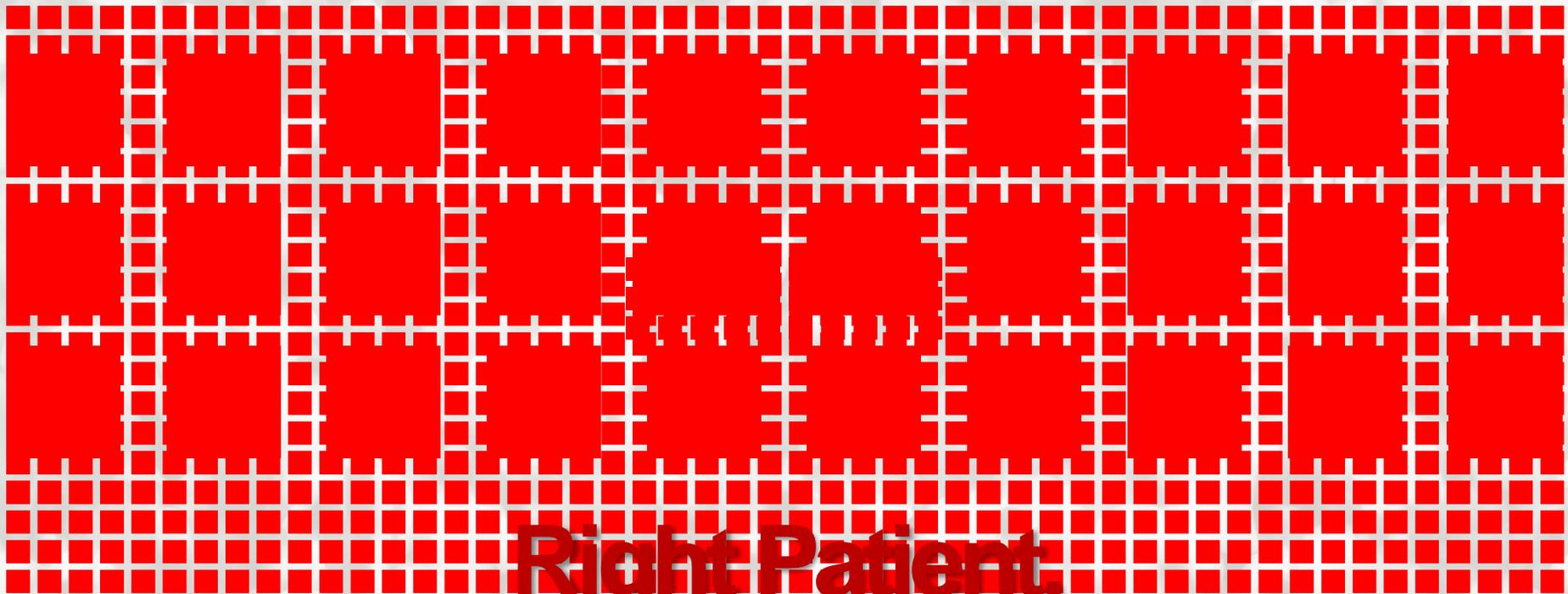
Working Example:
Precision Medicine Initiative in Oncology





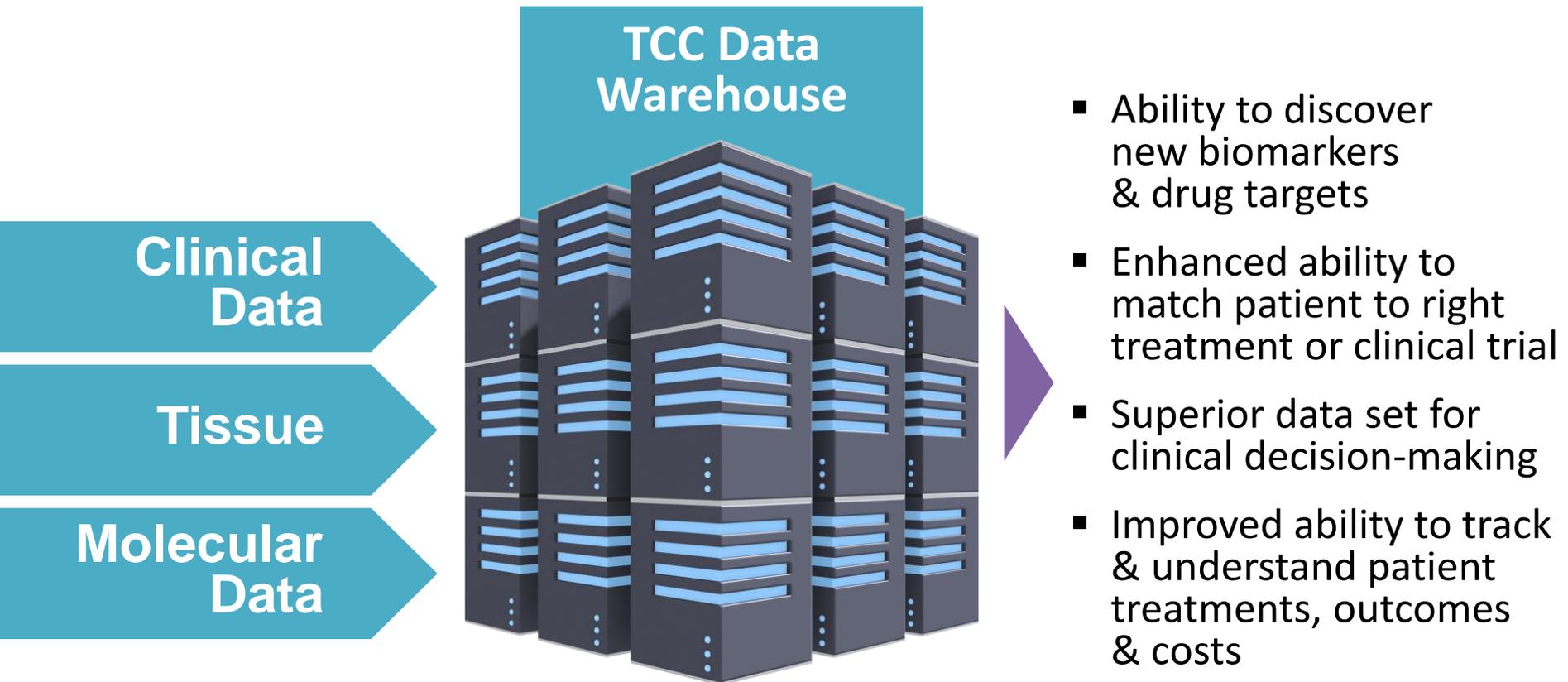
IMPACT

*Right Patient
Right Treatment
Right Time*



**Right Patient,
Right Treatment
Prevalence of Right Patients
For Right Time**

Power of Integrating Big Data



Thanks

For more information contact:

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TRANSLATIONAL TECHNOLOGIES
MOREHOUSE SCHOOL OF MEDICINE



- Pioneering breakthroughs in Biomedical Research for nearly 70 years
- Over 400 active grants and contracts (700+ active and closed annually)
- Submits **30 contract applications per month**
- Broad expertise in **toxicology, pharmacology, gene therapy**, on **clinical trials**
- Development of novel models of infectious disease (**emerging pathogens**), **Alzheimer's** disease, and cancer
- Increasing focus on Pharmaceutical R&D, dosing paradigms, endpoints
- Facilities, staff, processes needed to support all study aspects
- Successfully **administer** commercial and **federal** grants and **contracts**





**LOGISTICS
SERVICES**



**ENGINEERING
SERVICES**



**INFORMATION
TECHNOLOGY**



**BUSINESS
SERVICES**

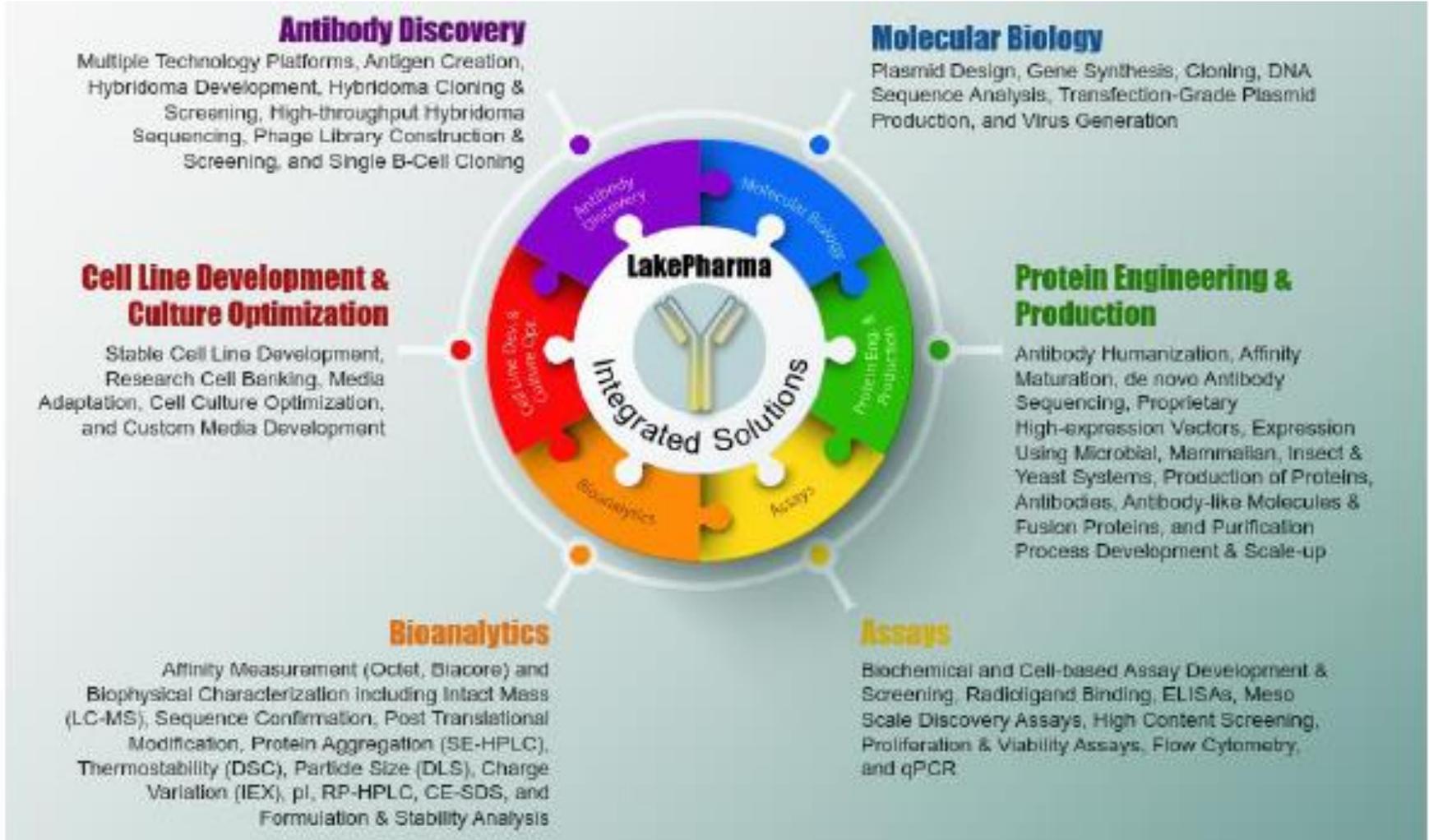


**MISSION
SUPPORT**



- Founded in 1987
- Headquarters in Alexandria, VA
- Employs a mix of skill sets to include-engineers, **scientists, programmers**, technicians, **logisticians** and administrative personnel
- Working on Three Continents
- **High-end Engineering, Software Services & Logistics Support**
- SENTEL's is a recognized provider of innovative products, imaginative solutions and quality services, with five core pillars of competency: Engineering Services, Mission Support, **Information Technology**, Logistics and **Business Support** Services
- ISO 9001:2008 Certification and CMMI Level II Certification





Translating protein drug or biomarker into final product



Million Veteran Program: A Partnership with Veterans



DISCOVERY  INNOVATION  ADVANCEMENT

MVP IS NOW ENROLLING

The Million Veteran Program (MVP) is a national, voluntary research program designed to better understand how genes affect health and illness.



- Founded in 2010, biorepository and genomics company based in Atlanta
- State of the art automation and robotics with suite of genomics platforms
- Operates in 14,000 sq. ft. purpose built laboratories and offices
- More than 120,000 samples processed in 2014
- Performs to high regulatory standards
- **CLIA/CAP compliant Biorepository services:** biobanking to regulatory standards, **DNA/RNA extraction**, QC & quantitation services, **genomics** services, assay development services for customers, informatics, molecular cytogenomics testing
- Awarded **Veteran's Affairs – MVP Contract**





Background

- Established: May 3, 2004
- Certifications: SBA (A) / 8a
- SWaM
- Dunns/Cage: 825333961
- 53FF5
- Headquarters: 7001
Loisdale Road, Suite C45,
Springfield, VA 22150
- www.supremesolutionsinc.com

Services

-  Program Management
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Neo-Biz Solutions, LLC

- Over 17 years of experience working in research administration.
- Expert knowledge of application guide lines for SBIR/STTR submissions.
- Submitted thousands of applications to numerous federal agencies.
- **SBIR/STTR Pre and Post Award Management**

